Boyle's Law Worksheet

Instructions: complete each problem on a separate sheet of paper. Show entire set up and box your answer.

1. Boyle's Law deals what quantities? (write a complete sentence on your answer sheet)

   a. pressure/temperature b. pressure/volume

   c. volume/temperature d. volume temperature/pressure

2. Solve Boyle's Law equation for V_2.

3. The air pressure for a certain tire is 109 kPa. What is this pressure in atmospheres?

4. The air pressure inside a submarine is 0.62 atm. What would be the height of a column of mercury balanced by this pressure?

5. The weather news gives the atmospheric pressure as 1.07 atm. What is this atmospheric pressure in mm Hg?

6. A gas occupies 12.3 liters at a pressure of 40.0 mm Hg. What is the volume when the pressure is increased to 60.0 mm Hg?

7. If a gas at 25.0 °C occupies 3.60 liters at a pressure of 1.00 atm, what will be its volume at a pressure of 2.50 atm?

8. If the pressure on a gas is decreased by one-half, how large will the volume change be?

9. A 1.5 liter flask is filled with nitrogen at a pressure of 12 atmospheres. What size flask would be required to hold this gas at a pressure of 2.0 atmospheres?

10. What pressure is required to compress 196.0 liters of air at 1.00 atmosphere into a cylinder whose volume is 26.0 liters?